Micropipetting and DNA Isolation

Utsav Acharya, BIO 1120 Section 03

Instructor: Christina Minassian

Reagents:

Micropipettes (p10, p100, p1000)

Micropipette tips

1.5 mL microcentrifuge tubes

Beakers (for waste disposal)

Laboratory manual

Protective gloves

Experiment Summary:

In this experiment, we will learn how to properly use micropipettes and isolate DNA from our cheek cells. Micropipetting is essential for handling tiny volumes of liquids in molecular biology labs. We will first practice setting volumes, attaching tips, and carefully operating the plunger to ensure accuracy.

Once comfortable with micropipetting, we will isolate DNA by collecting cheek cells, breaking them open to release DNA, and then separating the genetic material. We will observe how DNA behaves under different conditions and compare it to RNA. For example, DNA is insoluble in alcohol, while RNA behaves differently in similar conditions.

By the end of this lab, we should be able to properly use micropipettes, understand the basics of DNA isolation, and appreciate the unique properties of nucleic acids. This hands-on activity will build foundational skills for future work in molecular biology.